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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,682	04/20/2001	Lawrence E. Albertelli	FS-00495 (02890029AA)	8968
30743	7590	01/13/2005	EXAMINER	
WHITHAM, CURTIS & CHRISTOFFERSON, P.C. 11491 SUNSET HILLS ROAD SUITE 340 RESTON, VA 20190			HO, TUAN V	
			ART UNIT	PAPER NUMBER
			2615	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/838,682

**Applicant(s)**

ALBERTELLI, LAWRENCE E.

**Examiner**

Tuan V Ho

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. Applicant's arguments, see the amendment, filed 8/11/04, with respect to 1-19 have been fully considered and are persuasive. The restriction requirement of claims 1-19 has been withdrawn. Claims 1-19 are now examined on the merits.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, "said mirror", line 4 lacks antecedent basis.

In claims 8, and 9, "the location shifting means " lacks antecedent basis. Noted that claim 2 recites "means for shifting a location of an image sensor.

In claim 10 depending from claim 6, "said means for shifting a location" lacks antecedent basis. Noted that claim 2 recites the limitation.

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3. Applicant is advised that should claim 2 be found allowable, claim 7 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim.

See MPEP § 706.03(k).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kedar et al (US 6,271,972) in view of Hippenmeyer (cited by Applicant).

With regard to claims 1, 3, 6, 7 and 9, Kedar et al discloses in Fig. 2, an optical system comprising the doubly telecentric optical system (doubly telecentric lens 10, col. 8,

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line 25), an aperture (aperture stop AS is located at the junction of the back focal plane of lens group 14 and front focal plane of lens group 16 of a CCD camera including a CCD array sensor at image plane IP; wherein lens group 16 is considered as an objective lens system of the CCD camera, col. 8, line 44-45 and col. 10, line 57-60), and camera (a CCD camera includes lens group 16 and a CCD image sensor located on image plane IP, col. 10, line 57-60 and col. 11, line 7+), except that the junction of the back focal plane of a mirror and the front focal plane of a traditional camera objective.

Kedar et al does not explicitly discloses any mirror in the doubly telecentric lens. However, Hippenmeyer teaches using a concave mirror trip 13 and plane mirror trip 17 so as to lead an object image to the camera lens system 14. As a result using the mirror system, the optical axis of the system can be bent and the image forming system of Hippenmeyer can be located at a remote distance and take a picture of an object image at a desired location.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the lens group 14 including lens L1-L6 of Kedar et al with the mirror system including mirror 13 and 17 of Hippenmeyer in order to set the camera at a desired location.

With regard to claim 2, Official Notice is taken that a mechanical device is used to shift an image sensor so as to adjust focusing operation of an image on the sensor.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the mechanical device in the CCD camera of Kedar et al in view of Hippenmeyer so as to provide accurate focus operations for the system since in the doubly telecentric lens, the focus operation can only perform by moving the camera or image sensor (Kedar et al, col. 7, lines 54-58).

With regard to claims 4 and 5, Official Notice is taken that a concave mirror can be spherical or aspherical.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the concave mirror of Kedar et al in view of Hippenmeyer with the spherical or aspherical mirror because the replacement of the concave mirror of the system would allow a user to set the camera at different distances and locations and thereby to improve the versatility of the system.

With regard to claim 8, Official Notice is taken for a line scan sensor; where the line sensor is moved to scan an image on an image plane.

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the array CCD sensor of Kedar et al in view of Hippenmeyer with the line sensor so as to scan an object image on an image plane because the replacement of the array sensor of the system would allow a user to implement the doubly telecentric optical system in a scanner that can scan a document with higher resolution.

With regard to claim 10, in the combination of Kedar in view of Hippenmeyer as discussed with respect to claim 2, there inherently includes a focusing detection circuit that is used to detect a focused image by detecting distances between the object and the objective lens; as a result, the shifting means receiving the focus detecting data shifts the image sensor so as to correct the focusing of an image on the image sensor.

With regard to claim 11, Kedar et al discloses the objective lens of the CCD camera is a secondary objective of the doubly telecentric lens (lens group 16 includes L7 to L12 as shown in Fig. 2).

5. Claims 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kedar et al (US 6,271,972) in view of Hippenmeyer (cited by Applicant) further in view of Ikuzumi et al.

With regard to claim 12, in the camera system of Kedar et al in view of Hippenmeyer as discussed with respect to claim 2, the camera system discloses the means for processing data derived from the sensor (the camera system inherently includes a processing circuit that is used to process raw image signals from the CCD sensor into video signal so as to display on a monitor in order that a use can observe the object and make any adjustments with a operation unit); furthermore, Kedar et al discloses the doubly telecentric system can be used in a robot or conveyer belt (col. 4, lines 19-21), except that a controllable means and data derived from the image sensor is fed to the controllable means.

Kedar et al in view of Hippenmeyer does not explicitly disclose any controllable means and processed image data fed to the controllable means. However, Ikurumi et al teaches in Fig. 6, using an inspection system that includes belt conveyer 2, video camera 3 and determination control unit 10; where image signals of a printed circuit board on belt 2 derived from an image sensor of camera 3 by a processing circuit, are provided to control unit for a determination of boards (col. 7, lines 36-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify



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the camera system Kedar et al in view of Hippenmeyer as the same fashion as disclosed by Ikurumi et al so as to obtain a machine vision controlled system including a controllable means and processing means because the modification of the camera system of Kedar et al in view of Hippenmeyer would allow a user to inspect an object with high degree of accuracy.

With regard to claim 13, recites what was discussed with respect to claim 10.

With regard to claim 14, Furthermore, Ikuzumi teaches using determination control unit 10 that can recognize whether or not the mounting condition of a printed circuit board is good. In other words, a character condition of a printed circuit board is recognized by the determination unit 10.

With regard to claim 15, Furthermore, Kedar et al discloses the doubly telecentric system can be used in a robot or conveyer belt (col. 4, lines 19-21).

With regard to claim 16, Hippenmeyer discloses a plane mirror 17 (col. 3, line 21) as discussed with respect to claim 1.

With regard to claim 17, furthermore, Kedar et al discloses the doubly telecentric system that includes focus detection arrangement as discussed with respect to claim 10.

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With regard to claim 18, method claim 18 recites what was discussed with respect to apparatus claim 12. Furthermore, a printed circuit board inherently includes visible electrical components that are used by determination control unit so as to make a determination if the board is good (col. 7, lines 60-67).

With regard to claim 18, the camera system of Kedar et al in view of Hippenmeyer further in view of Ikurumi et al does not disclose any visible information that is a zip-code.

Official Notice is taken for an article labeled with a zip-code so as to be able to recognize by an inspection system in order to correctly distribute the article to a desired address.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a zip-code label on a printed circuit board of the camera system of Kedar et al in view of Hippenmeyer and Ikuzumi et al so as to easily to distribute to an address with higher degree of accuracy.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

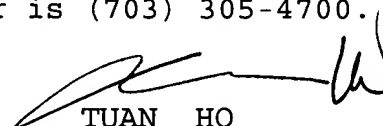
Yoshida discloses an object inspection that includes a conveyer belt.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUAN HO whose telephone number is (703) 305-4943. The examiner can normally be reached on Mon-Fri from 7AM to 4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen, can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



TUAN HO

Primary Examiner

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